Assessing the psychological distress and mental healthcare needs of unaccompanied refugee minors in the Netherlands

Bean, T.

Citation

Bean, T. (2006, October 19). *Assessing the psychological distress and mental healthcare needs of unaccompanied refugee minors in the Netherlands*. Retrieved from https://hdl.handle.net/1887/4921

Chapter 8

Prevalence, Course, and Associations of Maladaptive Psychological Distress and Behaviors of Unaccompanied Refugee Minors; One Year Epidemiological Follow-up Study Among Minors, Their Guardians and Teachers

Abstract

This epidemiological one year follow-up investigation addresses the prevalence, course, and predictors of the psychological distress and maladaptive behaviors of Unaccompanied Refugee Minors (URM) living in the Netherlands. The legal guardians, teachers and URM all reported on the mental health of URM at baseline and follow-up. The self-reported psychological distress of URM is severe, has a chronic nature, and was confirmed by reports from the legal guardians and teachers. A dose-response relationship was found between the number of experienced life events and level of psychological distress. Large predictive strength of psychopathology at baseline was evident in the regression analyses for psychological distress at follow-up as reported by each informant. Concordance in reports between the informants does not deviate from results of prior studies. The present study which used a population-based sample further enhances and enlarges the knowledge of mental health among refugee adolescents. The investigation is unique because of the large sample size, the longitudinal nature of the study, the use of multiple informants, and finally, the heterogeneous nature of the sample.

Introduction

Little is known about the mental health of Unaccompanied Refugee Minors (URM) residing in host countries. There are few quantitative studies that have addressed the mental well-being of this population (e.g., Derluyn, 2005; Felsman, Leong, Johnson, & Felsman,

1990; Geltman, et al., 2005; Masser , 1992; Melville & Lykes, 1992; Sourander, 1998). The psychological problems reported in the studies listed above as being most prevalent among URM are depression, anxiety, traumatic stress reactions, somatization, and maladaptive behavior. Qualitative studies that have addressed the emotional well-being of URM have emphasized the resiliency of unaccompanied youth amid their great loss and hardship (Goodman, 2004; Rousseau, Said, Gagne, & Bibeau, 1998).

This unique adolescent population appears to be at a high risk for experiencing high severity levels of psychological distress as a result of repeated exposure to traumatic experiences, an accumulation of problems (e.g., concentration difficulties in learning, avoidance coping, isolation), separation from family, personal loss, and great uncertainty surrounding their futures. Usually convenience samples are used (i.e., Geltman et al., 2005) when investigating the mental health of URM due to the host of practical difficulties in conducting research with refugees, therefore excluding the conduction of epidemiological studies. No epidemiological data for a host country (as far as is known by the authors) is available concerning the mental health of URM. Many of the URM studies reported above were cross-sectional resulting in ambiguity regarding the nature (temporary or enduring) of the psychological distress reported. There are a limited number of studies that have been carried out among accompanied refugee children/adolescents which have used in addition to the self reports of the adolescents other informants such as parents (i.e., Mollica, et al., 1997; Rousseau & Drapeau, 1998) or teachers (i.e., Rothe, et al, 2002) to report on the child's mental health , a standard which is widely accepted due to the bias of reports from one informant. However, again, there is a lack of studies which have utilized multiple informants to examine the mental health of URM.

Because of the scarcity of research on the mental health (on a national and international level), an epidemiological, follow-up research project using multiple informants as sources of information on the mental health of URM was undertaken among URM living in the Netherlands. There was a dramatic increase in the number of Unaccompanied Refugee Minors (URM) living in the Netherlands, peaking at approximately 15,000 in 2001. Due to the large increase in numbers of URM living in the Netherlands, there were also many practical problems reported in referring unaccompanied minors to mental healthcare services by their legal guardians (Nidos Foundation) ranging from not being able to find services to professionals refusing to treat URM because they held the view that the circumstances under which URM must live (limited knowledge of the Dutch language, no residential permit, transfers) would undo any effect from therapy. Therefore the goal of the project was to determine the prevalence and severity of psychological distress of URM population living in the Netherlands, their need for mental healthcare, and the availability of mental healthcare services for this population. The URM population in the Netherlands is extremely culturally heterogeneous (more than 100 countries) (Nidos Foudation, 2004). Nevertheless, since the objective of the study was to investigate the mental health of a large sample that would be representative of the total population of URM living in the Netherlands, no attempt would be made to assess only URM coming from specific cultures or countries.

This epidemiological and longitudinal study investigates the self-reports of URM and the reports of their guardians and teachers pertaining to (a) the prevalence, severity, and course of the psychological distress and maladaptive behaviors of URM; (b) the predictive value of demographic and clinical variables for psychological distress and maladaptive behaviors at follow-up; and (c) the strength of the correlations between the three informants reports concerning psychological distress and maladaptive behaviors.

Methods

Sample description
URM sample (n = 920). From the total population of 12,000 under the age of 17.5 years, approximately 4000 URM, ages ranging from 11 to 17.5 years were randomly selected from the Central Registrar of Nidos in 2002. URM had to reside for at least 4 months in the Netherlands at the time of the selection. Information about the study and permission waivers (available in translated versions) were sent to the guardians to discuss with the URM. Both the minor and his/her guardian needed to give written permission for the URM to participate. Roughly 2,300 URM permission waivers were returned; 1300 (57%) wished to participate,

15% refused, 12% did not participate for a wide range of practical reasons, 9% were transferred, and 7% turned out to be untraceable. However, there were no significant differences found between the basic demographic characteristics the URM that did participate and the URM that did not in gender (χ^2 (1, $N = 3686$)=1.21, ns) age (χ^2 (3, $N = 3686$) = 8.42, ns) and country of origin (χ^2 (8, $N = 3686$)=20.62, ns) (additional information is available). A total of 920 URM participated in the study. The final sample was representative in all of the main characteristics of the total URM population aged 12 to 18 year old in 2002 in the Netherlands. The URM came from 48 countries. Two-thirds of the sample had been living in the Netherlands for a period of 18 months or less. At least three research assistants administered the questionnaires to groups of ten to fifteen URM during one hour, usually at school or at their residential setting. After a period of 12 months had passed, contact was again sought with the same 920 URM that had participated in the first assessment period. Refreshments (T1) and a gift certificate for the cinema (T2, worth 7.50 euro) were given to the URM during or after the administration of the instruments as a token of appreciation for their participation.

Procedures

Ethical approval to conduct the study was given by the Medical Ethics Committee of the Leiden University Medical Center, Leiden University. Forty-two regional offices of the Nidos Foundation were spread throughout the Netherlands in 2002. After permission slips were returned, two information packages (one for guardian and one for teacher) were sent to the supervisors of each regional office for each guardian that was responsible for one of the 920 unaccompanied minors that took part in the study. The guardians received a letter with the questionnaires informing them about the study and giving instructions concerning how the questionnaires should be filled in. The guardians were instructed in the letter and by their supervisors that they could fill in the questionnaire or ask a staff member of the living unit/ foster parent of the unaccompanied minors to do so. However, the guardian remained responsible for retuning the completed questionnaires to their supervisors which in turn sent all the completed questionnaires from the regional office back. For the first assessment period, 557 questionnaires were returned from the guardians and for the second assessment, 501.

The guardian was also responsible to send the information package to the teacher. Enclosed in the information package for the teacher, was a letter describing the project, questionnaires and a stamped and addressed enveloped in order to enable the teacher to return the completed questionnaires directly. The teachers received a letter with the questionnaires informing them about the study and giving instructions concerning how the questionnaires should be filled in. For the first assessment period, 496 questionnaires were returned from the teachers and for the second assessment 272 questionnaires were returned.

Measurements

The self-report questionnaires were translated into the most prevalent languages of URM in the Netherlands: Albanian, Amharic, Arabic, Badini, Chinese, Dari, Dutch, English, Farsi, French, German, Mongolian, Portuguese, Russian, Servo-Croatian, Soerani, Somali, Spanish and Turkish. The literal terms of the likert scales were improved by using colored circles of increasing size. Items were simplified to adapt the questionnaires to the language abilities of this population, and the questionnaires were translated and presented in a bilingual form. The cross-cultural validation process and the norms for diverse adolescent populations (URM, immigrants/refugees, Dutch, and Belgium) for the three self-report questionnaires is thoroughly described in the pertaining manuals listed below.

The *Hopkins Symptom Checklist-37 for Adolescents* (HSCL-37A) (Bean, Eurelings-Bontekoe, Derluyn, Spinhoven, 2004a) measures internalizing distress (anxiety and depression symptoms) and externalizing behavior ("acting-out" behavior). The psychometric properties have been investigated among a culturally diverse adolescent population and appeared to be satisfactory to good (Bean et al., 2004a). Internal reliability for the URM sample for the total scale, internalizing and externalizing behavior subscales was respectively .91, 92, and .69. Twelve-month test-retest reliability for the total scale was analysed with a Pearson correlation coefficient and appeared to be satisfactory (r = .63, p <.001) (Bean et al.,

2004a). Inter-measure correlations with the total scores of the RATS and SLE were respectively .77 (p <.001) and .38 (p <.001)(Bean, in press). Using a confirmatory factor analysis, the two-factor structure, internalizing and externalizing, was verified in the URM sample with a loss of only .4% of the explained variance.

The *Stressful Life Events* (SLE) checklist (Bean, Derluyn, Eurelings-Bontekoe, Broekaert, & Spinhoven, in press) was used to assess the number and type of stressful event(s) that was experienced. The SLE consists of 12 dichotomous (yes/no) questions and an open question on the occurrence of stressful life events of relevance for adolescent refugee minors (e.g., "Have you ever experienced a war or an armed military conflict going on around you in your country of birth?" or "Has someone ever hit, kicked, shot at or some other way tried to physically hurt you?"). Having experiencing a traumatic event is the first criterion of cluster A1 of the DSM-IV for PTSD (American Psychiatric Association, 1994). The overall average total score of 6.5 of the SLE for URM has been replicated in 5 independent studies (Bean, et al., 2004b).

The *Reactions of Adolescents to Traumatic Stress* (RATS) (Bean, et al., 2006) is a self-report questionnaire developed to assess posttraumatic stress reactions defined in the DSM-IV (American Psychiatry Association, 1994) with culturally diverse adolescents. The RATS consists of 22 items that correspond directly to the B (intrusion), C (numbing/avoidance), and D (hyper-arousal) criteria of the DSM-IV for PTSD. Items were adapted to measure symptoms of intrusion, numbing/avoidance and hyper-arousal in adolescents, especially adolescent refugees. The psychometric properties have been investigated among culturally diverse adolescent populations and per language version of the RATS and appear to be satisfactory to good (Bean et al., 2004c). Internal reliability for the URM sample for the total scale, and intrusion, numbing/avoidance and hyper-arousal subscales was respectively .88, .85, .69, and .73. Twelve-month test-retest reliability for the total scale was analysed with a Pearson correlation coefficient and appeared to be satisfactory (r = .61, p <.001) (Bean, et al., 2006). Using a confirmatory factor analysis, the three-factor structure was verified in the URM sample with a loss of only 3% of the explained variance (Bean et al., 2004c).

The Dutch version of the CBCL/4/18; 1991 Profile-(Achenbach, 1991)-Dutch translation (Verhulst , van der Ende & Koot, 1996) was used to standardize the assessment of the behavior and emotional problems of unaccompanied minors through the observations of guardians. The CBCL has been found to be a reliable and valid instrument to be utilized by other informants than parents (Albrecht, Veerman, Damen, & Kroes, 2001). The CBCL scores for this study were dichotomized. The cutoff point was a *T score* of 60 or above for both the Internalizing and Externalizing scales. This cut off point has been established among Dutch adolescents and indicates a score which falls on or above the clinical borderline range (Verhulst et al., 1996). The validity and reliability of the Dutch CBCL for normative and clinical populations is thoroughly described in Verhulst et al. (1996). The psychometric properties for the CBCL in this study did not differ from those of Verhulst and colleagues (Bean, Mooijaart, Eurelings-Bontekoe, & Spinhoven, 2006).

The Dutch version of the TRF 4/18; 1991 Profile-(Achenbach, 1991)-Dutch translation (Verhulst , van der Ende & Koot, 1997) was used to standardize the assessment of the behavioral and emotional problems of unaccompanied minors through the observations of teachers. The TRF scores for this study were dichotomized. The cutoff point was a *T score* of 60 or higher for both the Internalizing and Externalizing scales. This cut off point has been established among Dutch adolescents and indicates a score which falls on or above the clinical borderline range (Verhulst et al., 1997). The validity and reliability of the Dutch CBCL for normative and clinical populations is thoroughly described in Verhulst et al. (1997). The psychometric properties for the TRF in this study did not differ from those of Verhulst and colleagues (Bean, Mooijaart, Eurelings-Bontekoe & Spinhoven, submitted).

Statistical Analysis
Differences between the attrition group (from T1) and the follow-up group at T1 were analyzed with chi-square tests and independent t-tests. The magnitude of the differences was

presented in effect sizes (*d*) (Cohen, 1988). Only the assessment information pertaining to the URM that took part at T1 and T2 were included in sequential analyses. Severity level was determined using percentiles or T-scores. To determine the severity at item level, item means were calculated and compared. Differences between T1 and T2 were tested using paired-samples t-tests. T-tests for independent samples and analyses of variance were used to examine the influence of socio-demographic variables on T2 self-reported emotional distress, maladaptive behavior, and traumatic reactions. Hierarchical linear regression analysis on residualized change scores were carried out to determine significant predictors of all scales. The standard adjustment for regression to the mean for change scores is the residualized change score, which seeks to determine the change for an individual if each individual had started at the same point. Residualized change scores can be thought of as Time 2 measurements controlled for their Time 1 level, or the amount of variance left over at Time 2, after accounting for initial levels. Furthermore, Pearson's moment coefficient correlations were used to assess the intra- and inter correlations between scores reported by the three informants, stressful life events, and age. The Statistical Package for the Social Sciences (SPSS) version 12.0 was applied for data analysis.

Results

Attrition

The second assessment wave took place approximately 12 months after the first assessment. From the 920 URM that participated in the first assessment (TI) 9.2% of the URM were listed in the Nidos Registrar as "missing – residence unknown". 16.5% of the 920 URM did not want to take part in the second assessment period. 9.7% of the URM did not respond to the 3 invitations that they received (by the researchers and guardians) to take part in the study for a second time (1.6% of the URM did not take part for a range of practical reasons). Finally, 582 (63%) of the URM took part in the second assessment. The mean age of the follow-up sample at T2 was 16.46 (SD 1.47, range 10-21), 72.9% being male. 37.9% of the follow-up sample at T2 had followed more than 5 years of formal education and 29.9% had another family member living somewhere in the Netherlands. More than half (55.8%) of the follow-up sample had entered the Netherlands after the critical month of April , 2001 when the governmental policy changed (40.4% lived 2 years or less in the Netherlands) and 30.5% had been transferred (at least 1 time) to another regional office sometime in year proceeding the T2. Furthermore, the majority of the follow-up sample lived independently (29.7%), in small living units (35.6%) and 19% lived in large scale reception centers. 40.9% of the follow-up sample had received a temporary residential status until their 18th birthday at T2.

Gender, age, type of residential setting, country of origin, experienced (individual-not shown in Table 1) stressful life events (SLE) and severity levels of emotional and behavioral problem (HSCL-37A, RATS, CBCL, TRF scales- Table 2) scores were compared (with the Chi-square statistic or t-tests) to investigate if there were differences between the attrition group and the follow-up sample at T1. Their were significant differences found between the attrition group and the follow-up sample at T1 for residential setting, age, HSCL-37A Externalizing scores and CBCL Internalizing scores. For all other variables, the follow-up sample was representative of the larger sample of 920.

Differences in the variables might have been biased indirectly by an age effect because a greater percentage of the attrition group was older than the follow-up sample at T1. Older URM were more difficult to find for the follow-up assessment because many were no longer registered by the Nidos Foundation. The variables that were found to be significantly different were further examined for differences in age. The mean ages for the different types of residential settings within the attrition group (AG) (F (4,333) = 60.5, p <.001) and within the follow-up sample (FU) at T1 (F (4,557) =115.2, p <.001) were all significantly different from each other . URM living in small living groups had the lowest mean age (AG = 13.3; FU=13.4) and URM living independently had the highest mean age (AG = 16.5; FU=16.7). This could explain, in part, why significant differences were found between the attrition group and follow-up samples for residential setting. Significant differences (with small effect sizes) were found between the attrition group and follow-up sample for scores on the HSCL-37A Externalizing scale (*d* = .23) and CBCL Internalizing scale (*d* = .30). The significant

correlation between HSCL-37A Externalizing scale and age was small and positive among the attrition group (r (304) =.14, p <.05), but not among the follow-up sample (r (548) = -.03, ns). When controlling for the effect of age on the HSCL-37A Externalizing scores between the attrition group and follow-up sample the difference remained significant, however small (F(1,852) = 7.80, p <.01; d = .20). The correlation between CBCL internalizing scale and age was negligible among the attrition group (r (147) = .04, ns), and among the follow-up sample (r (308) = 00, ns). When controlling for the effect of age on the CBCL internalizing mean scores between the attrition group and follow-up sample the difference also remained significant and small (F(1,454) = 8.41, p <.01; d = .29) . Apparently the few differences between the attrition group for T1 and the follow-up sample at T1 can only be partly explained by age differences within the samples.

Table 1.
Socio-demographic variables; Differences between attrition group and follow-up group at T1

	Attrition (n = 338) % M(SD)	Follow-up (n = 582) % M(SD)	χ^2 (df) or t (df)
Gender			.00 (1)
Girls	27.2	27.1	
Boys	72.8	72.9	
Country of origin	41.7(Angola)	43.3(Angola)	7.61(8)
Residential setting			50.16 ***(4)
Non-kinship or Kinship Foster care	2.7	5.5	
Living groups (24hr. daily supervision) (± 10)	8.6	16.7	
Living units (4 hr. daily supervision) (± 4)	41.4	52.4	
Large-scale Reception Center	42.0	22.9	
Independent	5.3	2.6	
Age	41.1(17 & older)	22.0(17 & older)	41.23*** (3)
Means (SD)	16.1(1.5)	15.5(1.5)	5.99 (918)***
Total number self-report stressful life events	33.5(8-13)	33.0 (8-13)	1.53 (3)
Means (SD)	6.1(2.7)	6.2 (2.6)	.95 (892)

*** Significant at the .001 level.

Relationship of socio-demographic variables with self-report measures

The influence of socio-demographic variables at T2 on the HSCL-37A Internalizing and Externalizing and RATS total mean scores were examined. Several variables could only be measured at the second assessment period (ie., obtaining a temporary residential status, change in guardian, transfer to another Nidos regional office and transfer to a different school, effect of utilization of mental healthcare services). Therefore only the influence of the socio-demographic variables at T2 will be addressed in this study.

Psychological distress or behavioral problems were not related to the following socio-demographic variables; length of stay in the Netherlands, change in guardian, change in school, coming to the Netherlands after April, 2001, and number of years of formal education. In contrast, the socio-demographic variables of gender, having a family member living in the Netherlands and being transferred to another regional office were significantly associated with scores for Internalizing problems and with RATS total scores. However, these variables were not associated with HSCL-37A Externalizing behavior. Girls reported slightly higher mean scores than boys (Internalizing, t (553) = 2.97, p < .01, d = .29; RATS, t (551) = 2.01, p < .05, d =.20). URM having a family member in the Netherlands reported lower mean scores than URM having no family member living in the Netherlands (Internalizing, t (519) = 4.67, p < .001, d = .45; RATS, t (518) = 3.07, p < .01, d =.30). URM that were transferred also reported slightly higher mean scores (Internalizing, t (519) = 4.67, p < .001, d = .23; RATS, t (518) = 3.07, p <.01, d =.19) than URM that were not transferred to another regional office. In addition having not obtained a temporary residential status at T2 was associated with higher HSCL-37A Internalizing scores (t (324) = 2.34, p <.05, d = .25). Older age was significantly

related with higher HSCL-37A Internalizing and Externalizing scores and RATS total scores (Table 4) at T2.

URM that had received any type of mental healthcare services in the Netherlands reported significantly lower scores at T2 on the HSCL-37A Internalizing scale (t (206) = 3.88, p<.001, d = .40) and RATS total scale (t (211) = 3.14, p <.01, d = .32) , but higher scores on the HSCL-37A Externalizing scale (t (544) = 3.41, p <.01, d = .37) than URM that had not received any mental healthcare services.

Because type of residential setting was strongly related to age, it was necessary to control for age effects when testing the effects of differences in residential settings on symptomatology. After controlling for age , significant differences were found between URM living in large scale reception centers and URM living in other types of residential settings regarding scores on the HSCL-37A Internalizing scale(F(4, 552) = 6.33, p <.001, range d =.49-1.22) and RATS total scale (F(4,550) = 2.97, p <.05, range d =.29-1.09. The largest effect sizes were found for the differences between URM residing in residential settings with 24 hour supervision (Foster care, small living groups) and URM residing in the large scale reception centers.

To be able to investigate the differences between scores of URM from different countries of origin on HSCL-37A Internalizing and Externalizing scales and the RATS total scale, it was necessary to control for age because there were significant differences found in mean age between URM coming from different countries of origin (F(8, 581) = 3.39, p <.01). After controlling for age by introducing it as a covariate in the analysis of variance, URM coming from Eritrea/Ethiopia reported the highest Internalizing mean scores (F (8, 555)= 4.00, p <.001) than all other URM, except for URM from Guinea. The largest differences in Internalizing means scores were found between URM coming from Eritrea/Ethiopia China (d = 1.15) (see Appendix chapter 8 on page 122). URM coming from Eritrea/Ethiopia reported by far the highest Externalizing mean scores (F(8, 565) = 6.80, p <.001-except for URM from Guinea) than URM coming from China and other African counties who by far reported the lowest Externalizing mean scores. However, no differences between URM coming from the different countries were found concerning RATS total scores (F(8, 553)= 1.68, p =.10) .

Symptom severity and changes in symptoms during follow-up
In Table 2, the means, standard deviations and percentage of URM scoring above the established cutoff scores for measures, based on normative Dutch adolescents' samples, are reported for the follow-up sample at T1. It is apparent from table 2 that all informants during T1 reported elevated scores on the Internalizing scale ranging from 26.8% from guardians to 46.2% for URM self-report. URM also self-reported elevated scores for traumatic stress reactions (RATS): 41.9% at T1.

Changes in severity of psychological distress and maladaptive behaviors for the URM follow-up sample were examined for all of the measures used in the present study (Table 2). There were significant differences found between the T1 and T2 mean scores on the HSCL-37A- total scale, HSCL-37A Externalizing scale, CBCL Total scale, CBCL Externalizing scale, TRF Total scale and TRF Internalizing scales. However, the magnitude of the effect sizes of all differences was found to be negligible. Continuity of both self-reported as well as teacher and guardian reported psychological distress and maladaptive behavior is evident.

Table 2.
Symptom severity and changes in symptoms

Variables	Attrition group and follow-sample at T1			Follow-up sample at T1 and T2					
	Attrition M(SD)	Follow-up M(SD)	t (df)	n	T1 M(SD)	T2 M(SD)	t (df)	d	r
HSCL-37A Total				519	65.5 (14.8)	66.8 (15.0)	2.42*	-.01	.63***
HSCL-37A internalizing	51.8(12.8)	50.2(13.0)	1.8 (826)	510	50.2 (13.0)	50.9 (13.1)	1.56		.64***
Cutoff % >95th percentile	50.2%	46.2%							
HSCL-37A externalizing	16.0(3.5)	15.2(3.1)	3.0 (561)**	535	15.2 (3.1)	15.9 (3.4)	5.01***		.53***
Cutoff % >95th percentile	18.1%	12.2%						-.08	
RATS Total	50.1(11.6)	48.7(11.5)	1.7(797)	494	48.7 (11.5)	48.3 (11.7)	.80		.61***
Cutoff % >95th percentile	48.4%	41.9%							
RATS Intrusion				516	14.0 (4.3)	13.7 (4.4)	1.77		.63***
RATS Avoidance/Numbing				504	20.0 (4.9)	20.1 (5.0)	.44		.44***
RATS Hyperarousal				530	14.6 (4.2)	14.6 (4.1)	.06		.55***
CBCL Total				225	19.6 (18.9)	16.6 (16.3)	2.32*	.01	.42***
CBCL internalizing	11.9(10.8)	9.2(8.1)	2.7(227)**	274	9.8 (9.4)	9.1(8.0)	1.34		.54***
Cutoff % > T-score 60	32.8%	26.8%							
CBCL externalizing	4.9 (6.5)	5.2 (7.0)	.4 (451)	270	4.9 (6.8)	4.0 (6.1)	2.26*	.03	.51***
Cutoff % > T-score 60	15.6%	17.8%							
TRF Total				82	25.0 (22.1)	16.7 (19.3)	3.02***	.01	.28*
TRF internalizing	10.1(9.1)	9.9(8.9)	.24 (431)	130	10.2 (8.7)	8.6 (7.5)	2.33*	.03	.52***
Cutoff % > T-score 60	36.4%	37.5%							
TRF externalizing	6.2(9.5)	6.1(9.0)	.1(433)	144	6.5 (9.7)	5.6 (8.7)	1.33		.59***
Cutoff % > T-score 60	16.2%	18.2%							

*p < .05. **p < .01. ***p < .001

Table 3.
Results of Hierarchical Regression Analysis for Predicting Changes in Symptoms at Follow-Up

Step	Variable	Total adj. R^2	df	Overall F	R^2 Change	F Change	Standardized β (for final step)
HSCL-37A internalizing at T2							
Step 1	HSCL-37A internalizing T1	.42	1,459	339.03***			.56***
Step 2	Age	.46	1,458		.04	34.41***	.14***
Step 3	SLE Total Score T2	.48	1,457		.02	18.71***	.17***
Step 4	Reception Center	.50	1,456		.01	12.63***	.14***
Step 5	Gender	.51	1,455		.01	11.14***	.11***
HSCL-37A externalizing at T2							
Step 1	HSCL-37A exernalizing T1	.24	1,463	149.72***			.46***
Step 2	Reception Center	.25	1,462		.01	7.40**	.13**
Step 3	Length of stay in country	.27	1,461		.01	8.64**	.12**
Step 4	SLE Total Score T2	.27	1,460		.01	5.76*	.10*
RATS Total score at T2							
Step 1	RATS Total score T1	.36	1,454	261.37***			.35***
Step 2	SLE Total Score T2	.41	1,453		.05	37.20***	.21***
Step 3	Age	.43	1,452		.02	17.70***	.15***
Step 4	HSCL-37A internalizing score T1	.44	1,451		.01	10.51***	.18***
CBCL internalizing at T2							
Step 1	CBCL- internalizing T1	.25	1,236	80.18***			.50***
CBCL externalizing score at T2							
Step 1	CBCL externalizing T1	.22	1,236	68.35***			.43***
Step 2	Age	.23	1,235		.01	4.53*	-.13*
TRF internalizing at T2							
Step 1	TRF- internalizing T1	.24	1,102	34.06***			.53***
TRF externalizing score at T2							
Step 1	TRF externalizing T1	.39	1,85	55.64***			.61***
Step 2	Length of time in NL	.41	1,84		.03	4.50*	.17*
Step 3	No family	.43	1,83		.02	3.55	-.16

*$p < .05$. **$p < .01$. ***$p < .001$

Predictors of change on URM self-report measures

Hierarchical regression analyses were preformed to select the best predictors of changes on all scales from each informant at T2. For each of the three regression analysis of the URM self-report measures at T2 (HSCL-37A Internalizing, Externalizing & RATS), the following independent variables were entered stepwise into the regression models in addition to the T1 scores on the dependent variable; gender, having a family member living in the Netherlands, type of residential setting (dummy variables), age at T2, length of stay in the Netherlands, transfer in regional office, and number of reported stressful life events at T2. In addition, the T1 scores of the remaining two self-report measures were also entered into model being analyzed.

For the first analysis, the HSCL-37A internalizing scores at T2 was the dependent variable. The independent predictors that are listed above were entered into the regression model and a few were found to contribute to explaining the variance in internalizing scores at T2 after controlling for the HSCL-37A internalizing scores at T1(which alone explained 42% of the variance). Older age, total number of SLE's reported at T2, living in a reception center and gender all contributed significantly to the amount of variance that could be explained. The overall multiple correlation was $R = .72$. or 51% of the total variance in HSCL-37A internalizing scores at T2 can be explained by the predictor variables.

In the second regression analysis, the HSCL-37A externalizing scores at T2 was the dependent variable. The independent predictors that are listed above were entered into the regression model and three were found to contribute to explaining the variance in scores after controlling for the HSCL-37A externalizing at T1(accounting for 24% of the explained variance): living in a reception center, (longer) length of stay in the Netherlands and total number of SLE's reported at T2. The overall multiple correlation was $R = .53$ or 27% of the total variance in HSCL-37A externalizing scores at T2 can be explained by the four predictor variables together.

The final regression analysed RATS total scores at T2 as the dependent variable. The independent predictors that were entered into the regression model and were found to contribute to explaining the variance in scores after controlling for the RATS total score at T1 (alone accounting for 36% of the variance) were total number of SLE's reported at T2, age, and HSCL-37A internalizing scores at T1. The overall multiple correlation was $R = .67$ or 44% of the total variance in RATS total scores can be explained.

Predictors of change on Guardian and Teacher reports

Hierarchical regression analyses were also preformed to select the best predictors of the CBCL Internalizing and Externalizing severity levels at T2. For each regression analysis in addition to the scores at T1 on the dependent variable analysed the following independent variables were entered into the regression models; gender, having a family member living in the Netherlands, type of residential setting (dummy variables), age at T2, length of stay in the Netherlands, and transfer in regional office.

The CBCL Externalizing scores at T1 explained 22% of the variance in the CBCL scores at T2. Younger age significantly accounted for a small additional amount (1%) of the explained variance in the CBCL Externalizing scores at T2. The overall multiple correlation was $R = .51$ or 23% explained variance. Furthermore the only robust predictor of T2 CBCL Internalizing scores were CBCL Internalizing T1 scores accounting for 25% of the variance.

For each regression analysis with the teachers reports (TRF), in addition to T1 measurements of the variable analysed the following independent variables were entered into the regression models; gender, having a family member living in the Netherlands, type of residential setting (dummy variables), age at T2, length of stay in the Netherlands, and transfer in regional office. The only significant predictor of the TRF Internalizing scores at T2 were the T1 TRF Internalizing scores explaining 24 % of the variance. Two additional independent variables, i.e. having no family in the Netherlands and (longer) length of time residing in the Netherlands, accounted for an additional amount of the explained variance in T2 TRF externalizing scores over and above the T1 TRF externalizing scores (alone explaining 39% of the variance). The overall multiple correlation was $R = .67$ or 43% of the variance in T2 TRF Externalizing scores could be explained by these 3 independent variables.

Correlations

Using Cohen's effect magnitude for correlations, correlations above .10 are considered small, above .30 are considered medium and correlations above .50 are considered large (Cohen, 1988). The largest significant correlations were found between the self-reported Internalizing distress and traumatic stress reactions for both T1 (r (496) =.78;p <.001) and T2 (r (540) =.80;p <.001) and between de TRF Internalizing and Externalizing scores at T2 (r(108) =.56; p <.001). The magnitude of the intra-informant specific correlations between Internalizing and Externalizing scores were all significant with an medium magnitude during both T1 and T2 (URM - r(526) = .44;p <.001 (T1), r (551) = .49;p <.001 (T2);Guardian - r(294) = .44;p <.001 (T1), r (339) = .45;p <.001 (T2); Teacher - r(268) =.46;p <.001 (T1), r (108)= .56;p <.001 (T2). The Internalizing correlations per informant pair for T1 and T2 were found to be significant but small (URM & Guardian, r(282) = .21;p <.001 (T1), r (334) =.13;p <.001 (T2); URM & teacher, r(277) = .19;p <.001 (T1), r(114) = .25;p <.001 (T2); Teacher & Guardian, r(176) =.19;p <.05 (T1), r (176) =.26;p <.001 (T2). The Externalizing correlations per informant pair were smaller between URM and guardian r (292) = .14;p <.05 (T1), r (343) = .17;p <.001 (T2) and URM and teacher r(281) = .16;p <.001 (T1), r (123) =.11; *ns* (T2) , than between guardians and teachers r(168) = .46;p <.001 (T1), r (116) = .42;p <.001 (T2).

There were also significant and positive correlations between URM's self-reported total number of SLE's and Internalizing r(542) = .41; p <.001 (T1), r(555) = .37;p <.001 (T2) , Externalizing r (537) = .10; p <.05 (T1), r (565) =.19; p <.001 (T2), and traumatic stress reactions r (516) = .42;p <.001 (T1), r(553) =.44; p <.001 (T2). However, there were no significant correlations found between guardian or teacher reported psychological distress or behavioral problems and total number of SLE's as reported by the URM themselves (data not shown).

Item endorsement level comparisons

The 10 items that had the highest item mean (received most frequently a high severity score) are listed for each informant in Table 5. It becomes clear through this comparison at item level, that although the correlations mentioned in the previous section were low between informants, that the 10 symptoms that received the highest severity scores from all of the informants have common themes such as physical reactions (headaches, sleeping problems), loneliness, withdrawn/avoidance behavior, hyperarousal (vigilance, concentration problems, irritability).

Table 4.
Most severe10 symptoms reported by URM, guardians and Teachers for T1

	HSCL-37A & RATS items	M	CBCL items	M	TRF items	M
1.	Afraid/sad when thinks about event (RATS)	2.76	Worries	.69	Emotional distant (secretive)	.67
2.	Feels alone (RATS)	2.71	Emotional distant (secretive)	.56	Worries	.56
3.	Avoiding places & people that reminds of event (RATS)	2.62	Sad	.51	Daydreams	.52
4.	Unwanted thoughts about event (RATS)	2.56	Concentration problems	.45	Often late	.49
5.	Physical reactions in body (RATS)	2.54	Headaches	.42	Shy	.47
6.	Waking-up during the night/ Waking-up early (RATS)	2.49	Nightmares	.40	Concentration problems	.45
7.	Vigilant (RATS)	2.45	Problems sleeping	.40	Sad	.44
8.	Problems sleeping (HSCL-37A)	2.45	Lonely	.38	Truancy	.42
9.	Pushes feelings away concerning event (RATS)	2.45	Shy	.37	Headaches	.41
10.	Lonely (RATS)	2.45	Irritable	.36	Difficulties learning	.40

Discussion

This study investigated the prevalence, course, predictors and concordance of psychological distress and maladaptive behaviors of Unaccompanied Refugee Minors (URM) living in the Netherlands in a 12 month follow-up study as assessed by URM self-report and teacher and guardian ratings. The high unremitting symptom severity levels reported by URM, their guardians and teachers indicate a chronic course of mainly traumatic stress reactions and emotional distress among this specific population. Large predictive strength of psychopathology at the first measurement for psychopathology at the second measurement was evident in the regression analyses of internalizing distress, externalizing behaviors according to all informants. Furthermore the concordance between informants was poor.

The severity levels of traumatic stress reactions and internalizing distress that have been found in this study do not deviate from previous studies with refugee adolescents studies (e.g., Smith, Perrin,Yule, Hacam, & Stuvland, 2002; Thabet & Vostanis, 1999) or studies assessing the psychological distress among (western) youth living in foster care (e.g., McMillen et al., 2005; Shore, Sim, Prohn, & Keller, 2002). McMillen et al. (2005) and refugee studies listed above all found that traumatization was strongly associated with high levels of psychological distress reported in their samples. This dose-response relationship was confirmed in the present study. The elevated levels of (traumatic) stress reactions among all of these groups however do contrast greatly from the low levels (3%-6.3%) reported among normative populations (i.e.,Cuffe et al., 1998; Giacona et al., 1995).

The most robust predictor of the emotional distress and maladaptive behaviors of URM at follow-up was the initial assessed severity level as reported by each informant on every measure. This finding supports the monitoring of symptoms to apply timely psychosocial interventions among URM. The total number of self-reported stressful life events, after controlling for initial severity level with residualized change scores, remained a significant predictor of URM self-reported traumatic stress reactions as well as general emotional distress and maladaptive behaviors at follow-up. The other significant predictors of follow-up psychological problems; such as age, living in a reception center, residing for a longer period of time, gender and having no family living in the Netherlands, explained very little variance in outcome, especially as assessed by guardians and teacher ratings.

The magnitude of the effect of socio-demographic factors on severity levels of emotional distress among URM was small or nonexistent. Age appeared to be the only factor of importance. Several studies have verified age being related to traumatic stress reactions (Smith et al., 2002; Thabet & Vostanis 1999). In addition, Realmuto et al., (1992) have postulated that it may be possible that younger children do not fully comprehend the full magnitude of war related experiences which functions as a protective factor. In this study, a higher number of negative life events was also associated with older age implying that older URM have been exposed to more traumatic experiences.

Strong continuity in psychopathology of adolescents has been previously documented (e.g., Visser, van der Ende, Koot, &Verhulst, 1999). Longitudinal studies that have been carried out with refugee adults have found persistent high symptoms levels (e.g., Steel et al., 2004). Previous longitudinal investigations among refugee children and adolescents have observed an uncoupling from depression and traumatic stress reactions over time with the later taking on a chronic form (Almqvist & Broberg, 1999; Sack et al., 1999;). However, in the present study there is no indication of severity levels of anxiety/depression lowering over time, perhaps due to the high levels of uncertainty surrounding the life of an URM residing in the Netherlands. More evidence is needed through longer prospective studies, which are carried out in different host countries, to be able to draw definite conclusions on these contrasting findings.

Correlation between reports of URM, guardians, and teachers were quite low which constitutes a rather common finding in research of the assessment of mental health of adolescents from different perspectives (Rousseau & Drapeau, 1998). At item level, the concordance between informants was evident and complimentary. This finding suggest that the guardians and teachers are not always accurate in the individual assessment of the well-being of URM which would have lead to higher intermeasure correlations, but are aware of the general type of psychological distress that URM experience. Kramer et al. (2004) found that disagreement between informants reports can be a result of (1) differences in how

adolescents and adults interpret the questions posed, (2) lack of awareness of problems by parents, and (3) different thresholds held by the informant of what a "problem" is. Ferdinand and colleagues (2004) have found that "if adolescents reports considerably more emotional problems than their parents (possibly as a result of poor recognition by parents), the risk for persistence of emotional problems in young adulthood may increase." Both of these recent studies call attention to the adverse effects of disagreement between informants on reports of emotional and maladaptive problems. In the present study, weak correlations have been found which raise concern if the significant adults in the lives of URM are able to recognize their emotional suffering.

Methodological Challenges

This study examined the mental health of an exceptionally culturally diverse population. With this amount of diversity, some discussion concerning validation of measures and cultural influence in symptom reporting is required. The psychological measurements that have been used in this study have been thoroughly examined and data supporting their validity and reliability with diverse adolescent populations have been collected (See Questionnaire section for a list of references). It was not apparent in the data that there should be doubt that adolescents from one culture perceived the questions differently than another; however individual differences that did not appear in the data could have taken place.

Although the attrition group for the first and second assessment was quite large, at least on an objective demographic level, there were no apparent differences between the study sample and attrition group. However, here again individual subjective differences that did not appear in the data could have been present but were not apparent. Wiesaeth (1989) commented that often the most traumatized individuals do not take part in studies due to their avoidance of all trauma-related stimuli. If this point of view is taken seriously, than the severity findings in this study could be seen as an underestimation, but certainly not an overestimation of the true severity levels for psychological distress among URM.

In the present investigation few differences were found between URM coming form different countries of origin in the reporting of emotional distress. Although this lack of difference could have come from the unequally sized cultural groups, perhaps a more plausible explanation would be that the number and type of traumatic experiences one experiences is a better predictor of psychological distress than socio-demographic factors such as country of origin, gender or age. Patel (2001) makes the argument that within one country itself there is enormous diversity (i.e., gender, age, socioeconomic status, individual subjective differences) among residents which makes it very difficult to measure the broad effect of "country of origin" on the psychological well-being of emigrated citizens to western countries.

The inter-agreement correlations that were found in the present study were poor. This could be a result not only from the reasons already mentioned above, but because a different questionnaire was used with URM instead of the standard Youth Self Report (YSR) that is usually administered with the CBCL en TRF. The YSR was not used in this study because; (1) the YSR was not available in the languages needed at the start of this project, (2) has not been validated for this specific population, (3) in a previous investigation among refugee adolescents in the Netherlands (Vervuurt & Kleijn 1997) was considered to be too long for the short attention spans of refugee adolescent, and (4) some questions were very difficult for the adolescents to understand or for the interpreters in achieving semantic equivalence.

Preferably, a standardized diagnostic interview is used in combination with questionnaires to determine the presence and severity of psychopathology. It was not feasible in the URM study to administer a diagnostic interview for the main reason that there is no validated psychiatric diagnostic interview available in all of the languages of (refugee) adolescents who took part in this study. It would have first been necessary to test the validity and reliability of a psychiatric interview in the 19 languages before it could have been utilized as a criterion. Furthermore, the use of diagnostic interviews in cross-cultural studies invokes itself a host of methodological issues such as classifying culture-specific disorders and ensuring "the semantic and psycholinguistic equivalence of psychiatric symptoms across cultures" (Cheng, 2001).

Implications

It is first relevant to briefly review the literature on the treatment possibilities and available mental healthcare services available to URM before giving recommendations for interventions. It has been documented that refugees who have experienced many traumatic experiences can suffer from psychological distress for many years (Sack et al., 1999; Steel et al., 2004). Biological changes in the brain and hormonal levels have also been known to be altered due to (chronic) exposure to traumatic experiences which in turn can result in permanent developmental and/or personality changes (Charney, 2004).

Furthermore, there is little research examining the treatment of chronic traumatic stress reactions in children and adolescents, therefore, limiting the evidence of effective interventions (Salmon & Bryant 2002; Lustig et al., 2004). Salmon and Bryant (2002) emphasize that a child (adolescent) must be competent in regulating his/her emotions before cognitive-behavioral trauma therapy is possible. In addition, mental healthcare services have higher thresholds for refugees (Silove, Steel, McGorry, & Drobny, 1999) and for parental accompanied refugee adolescents and children than for the original population of the host country (Howard & Hodges, 2000). Literature concerning the mental health needs of young refugees suggest that large scale therapeutic (social) care (Kohli & Mather, 2003) or a low threshold to mental health services (Hodes, 2002) is needed to properly fulfill the needs of young refugees.

In light of this short review and the results of this study which have emphasized the chronic nature and high severity levels of (traumatic) psychological distress among URM, it is imperative that large scale, low-threshold (in residential settings) psycho-social interventions be applied to this specific "at-risk" population. A stepped care approach to providing mental healthcare to URM in which the aim is fitting the intensity of care to their psychological needs seems most adequate. Periodic screening and monitoring of their emotional distress will enable the significant adults in their lives that currently underestimate the psychological distress of URM to become aware of the high levels of the psychological suffering and to intervene appropriately. Ciarrochi and colleagues (2002) have proposed that teaching adolescents how to effectively identify and manage emotions will lead to positive help-seeking behavior such as a better ability to estimate when help is needed from their social network. Since they cannot learn skills to become emotional competent from their parents, basic social skills, relaxation techniques, self-reflection through journaling and skills to manage (chronic) traumatic stress reactions can be most effectively learned in the their daily lives at school or in the residential setting in which they live. Low-threshold, outreaching, mental healthcare will enable these young people to acquire the psychological tools that are necessary to manage the great levels of uncertainty, anxiety, negative stress and emotional pain in their lives.

Appendix Chapter 8
Effect country of origin on the RATS Total scores, HSCL-37A internalizing, and HSCL-37A externalizing at T2

	RATS Total scores				HSCL-37A internalizing					HSCL-37A externalizing				
	n	M	SD	F^	n	M	SD	F^	Post hoc Contrasts	n	M	SD	F^	Post hoc Contrasts
1. Eritrea/Ethiopia	14	55.61	11.15	1.68	14	61.68	13.89	4.00***	9=8=7=6=5= 2<4<3=1	14	19.01	4.03	6.80***	9<8=7=6=5= 2=4<3=1
2. Other African Countries	67	50.11	10.99		70	53.81	14.60			70	15.32	3.14		
3. Guinea	41	49.96	11.91		38	58.10	13.40			42	18.07	4.19		
4. Other countries	49	49.98	10.78		49	53.33	13.60			50	16.70	3.43		
5. Iran/Afghanistan/Iraq	31	47.99	9.83		31	49.14	11.29			31	16.88	4.59		
6. Angola	241	47.53	11.64		242	49.70	12.41			246	15.63	2.90		
7. Sierra Leone	45	49.87	11.59		47	50.67	12.96			47	15.75	3.32		
8. Somalia	10	45.96	11.96		10	48.73	12.46			10	16.50	4.14		
9. China/Tibet	55	44.72	12.63		54	47.02	12.69			55	14.34	1.88		

Note. ^F value is controlled for age; *** Significant at the .001 level.